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CLMPTO

09/25/01

aa

(original)

1. An artificial vision method, **characterized** by:

generating an image percept vector;

transforming said image percept vector into a feature vector; and

generating a response array by multiplying said feature vector by a trained linkage matrix modeling a percept-response system.

(original)

2. The method of claim 1, **characterized** by said feature vector including the covariance products of said image percept vector.

(original)

3. The method of claim 2, **characterized** by said feature vector including the auto-covariance products of said image percept vector.

(original)

4. The method of claim 3, **characterized** by said feature vector including components of said image percept vector.

--5. (currently
(Amended))

The method of claim 1, **characterized** in that the elements of said linkage matrix are non-negative.

(original)

6. The method of claim 5, **characterized** in that the elements of said linkage matrix are restricted to values between zero and a predetermined positive value.

currently

7. (Amended) The method of claim 1, **characterized** by forming a coupled feature vector by coupling said feature vector to a response array, represented by a vector, using a Kronecker product before performing said matrix multiplication.

^{Currently}
8. (Amended) The method of claim 1, **characterized** by forming a coupled feature vector by coupling said feature vector to several response arrays, represented by vectors, using repeated Kronecker products before performing said matrix multiplication.

^{Currently}
9. (Amended) The method of claim 1, **characterized** by said response array being a coupled response vector formed by two response vectors coupled to each other by a Kronecker product.

^{Currently}
10. (Amended) The method of claim 1, **characterized** by said response array being a coupled response matrix formed by two response vectors coupled to each other by an outer product.

^{Currently}
11. (Amended) The method of claim 1, **characterized** by said linkage matrix being a coupled linkage matrix formed by weighting a set of uncoupled linkage matrices with the elements of another response vector.

^{Currently}
12. (Amended) The method of claim 1, **characterized** by converting each response vector into a corresponding scalar response signal.

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currently
13. (Amended) The method of claim 1, **characterized** by discarding linkage matrix elements below a predefined threshold.

currently
14. (Amended) The method of claim 1, **characterized** by said percept vector being sparse, each non-zero percept vector element giving a continuous representation limited in definition range with respect to some variable property of an object in an image.

currently
15. (Amended) The method of claim 1, **characterized** by said percept vector being sparse, each non-zero percept vector element giving a continuous representation, limited in spatial range, of the position an object in an image.

(original)
16. An artificial vision system, **characterized** by:
means (12, 14) for generating an image percept vector;
means (16) for transforming said image percept vector into a feature vector; and

means (16) for generating a response array by multiplying said feature vector by a trained linkage matrix modeling a percept-response system.

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(original)
17. The system of claim 16, **characterized** by means (18, 20) for training said linkage matrix.

(original)
18. A percept-response system for sensing and control, **characterized** by:
 means (12, 14) for generating a percept vector;
 means (16) for transforming said percept vector into a feature vector;
and
 means (16) for generating a response array by multiplying said feature vector by a trained linkage matrix modeling said percept-response system.

(original)
19. The system of claim 18, **characterized** by means (18, 20) for training said linkage matrix.